



Coastal Communications



ENDANGERED SPECIES SENSITIVITY AND ECOLOGICAL RISK ASSESSMENT ORD/OW/OPPTS/USGS/UNIVERSITY OF MISSOURI



Background

The U. S. Environmental Protection Agency (EPA), U.S. Fish & Wildlife Service, and National Marine Fisheries Service share a common responsibility for the protection of our nation's aquatic species under the Endangered Species Act (ESA) of 1973. The EPA, under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Toxic Substances Control Act (TSCA), and the Clean Water Act (CWA) assess risk to aquatic species, and it has been assumed that these processes are also protective of endangered species. Until recently, little or no toxicological data existed to determine if endangered species were more sensitive to chemicals than other species, and if present laws adequately protect endangered species.



Razorback Sucker
Xyrauchen texanus



Laboratory Test System



Desert Pupfish
Cyprinodon macularius

Activities

The ultimate goal is to provide EPA with tools to predict acute and chronic effects on endangered species without physically testing them, and thereby insure their adequate protection. However, a limited number of individuals of selected species must first be tested to develop relationships for estimating relative sensitivities of endangered species.

Collaborative efforts between EPA's Gulf Ecology Division and Offices of Water (OW) and Prevention, Pesticides, and Toxic Substances (OPPTS), the U.S. Geological Survey (USGS), and the University of Missouri, have resulted in testing 17 endangered or related fishes, 1 endangered toad, and 3 species (fathead minnow, rainbow trout, sheepshead minnow) commonly used in risk assessments, with 5 chemicals representing a broad range of modes of action (carbaryl, copper, 4-nonylphenol, pentachlorophenol, and permethrin). Two Windows®-based software programs are being developed for acute and chronic toxicity extrapolations from commonly tested species to endangered ones: Interspecies Correlation Estimation (ICE) and Acute to Chronic Estimation (ACE). These programs will assist EPA in carrying out its mandates under ESA, FIFRA, TSCA, and CWA for the protection and recovery of endangered species. Completion of the software and user manuals are scheduled for 2002.

Further Information

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